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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,469	09/22/2003	Toshikazu Onishi	60188-660	5515

7590 04/28/2006

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EXAMINER

NGUYEN, PHILLIP

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 04/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

11A

Office Action Summary	Application No. 10/665,469	Applicant(s) ONISHI, TOSHIKAZU	
	Examiner Phillip Nguyen	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-12 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,8 and 16 is/are allowed.
- 6) ☒ Claim(s) 1,4-6,9-12,14 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/3/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

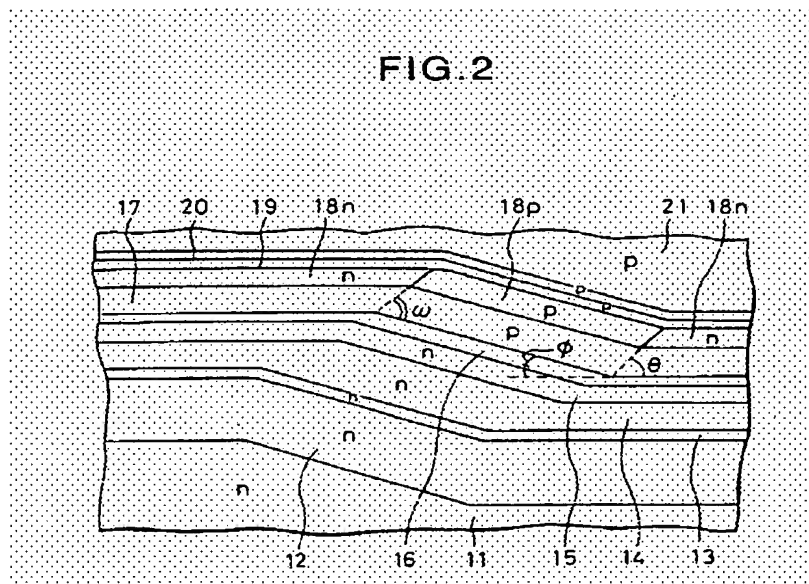
1. Applicant's arguments with respect to claims 1, 4-6, and 9-15 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 6, 12, and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anayama et al. ('531).



With respect to claims 1 and 4, Anayama discloses in Fig. 2 (above) a semiconductor laser device comprising an active layer; a first cladding layer 17 formed on the active layer, the first cladding layer being doped with first impurity (Mg) and a second cladding layer 18 formed on the first cladding layer, the second cladding layer being doped with a second impurity (Zn) different from the first impurity wherein the first cladding layer has the same conductivity type (p type) as that of the second cladding layers and the first cladding layer has a resistivity higher than that of the second cladding layer due to the thickness and the type of dopants. Anayama also teaches each of first and second cladding layers being made of a compound semiconductor containing phosphorous (col. 8, lines 60-65). It is noted that the claim recites “a first impurity to have a dopant concentration higher than $4 \times 10^{17} \text{ cm}^{-3}$. However, Anayama discloses the range of this dopant being about $1 \times 10^{17} \text{ cm}^{-3}$ to about $4 \times 10^{17} \text{ cm}^{-3}$. Firstly, according to the MPEP section 2144.05 for Obviousness of Ranges as follow:

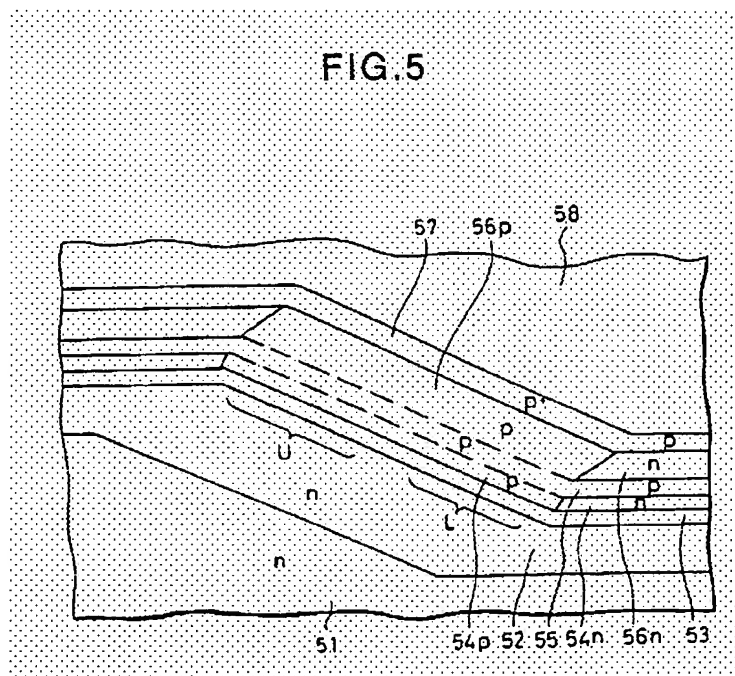
Art Unit: 2828

the use of a thickness within [applicant's] claimed range.”). Similarly, a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of “having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium” as obvious

over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.).

In this case, for example, if the claimed dopant concentration is just slightly higher ($4.000000000000000001 \times 10^{17} \text{ cm}^{-3}$) than the one disclosed in prior art, there will be no difference in the result. Secondly, Anayama discloses the dopant concentration being in a range “about $4 \times 10^{17} \text{ cm}^{-3}$ ”, which maybe slightly lower or higher than the exact $4 \times 10^{17} \text{ cm}^{-3}$.

Therefore the claimed range could also be within the disclosed range by prior art.



With respect to claim 6, Anayama discloses in Fig. 4 and 5 (above) a laser as claimed in claim 1 with the first cladding 54 and the second cladding 55/56. Besides teaching a first impurity and a second impurity and Anayama also teaches a third impurity (selenium) which creates the n type conductivity on the sides of cladding layer 54 and denoted as 54n.

With respect to claims 12 and 14-15, since Anayama discloses the product, it is inherent product by process for performing the methods as recited in the claims.

3. Claims 5 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anayama et al. ('531) in view of Gen-Ei et al. ('420). Anayama discloses the claimed invention except for explicitly teaching a third impurity of the first cladding, and also the cladding containing arsenic where first cladding having an impurity which is carbon instead of magnesium. Gen-Ei discloses in Fig. 3A a semiconductor laser device 40 comprising an active layer 14; a first cladding layer 16 formed on the active layer, the first cladding layer being doped with a first impurity to have high resistivity (col. 7, lines 33-45) and a second cladding layer 18 having an impurity and also a concentration of the first impurity of the first cladding is about $1 \times 10^{17} \text{ cm}^{-3}$ to about $4 \times 10^{17} \text{ cm}^{-3}$ which is in the claimed range (col. 7, lines 40-44). It would have been obvious to the one having ordinary skill in the art at the time the invention was made to replace Mg with Carbon because they both create the same properties when used as dopant and suggested by Gen-Ei.

Art Unit: 2828

Allowable Subject Matter

4. Claims 7-8 and 16 are allowed.

Communication

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phillip Nguyen whose telephone number is 571-272-1947. The examiner can normally be reached on 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MINSUN HARVEY, can be reached on 571-272-1835. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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JAMES
MENEFFE